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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,905	12/27/2001	Seiichiro Higashi	038404.02	1688

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EXAMINER

MENGISTU, AMARE

ART UNIT	PAPER NUMBER
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2673

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DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,905

Applicant(s)

HIGASHI, SEIICHIRO

Examiner

Amare Mengistu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>18</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-24,27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanatani et al** (5,412,397) in view of **Maekawa et al** (5,686,936) and **Nakamura** (5,307,085).

As to claims 22-24,27-29, **Kanatani et al** discloses a display device, comprising: a plurality of scan lines (fig.1 (11)); a plurality of data lines (fig.1 (12)); a display matrix comprising a plurality of pixels (col.3, lines 26-39); a first data line driving circuit (fig.1 (3)); a second data driving circuit (fig.1 (4)); the first data line driving circuit (fig.1 (3)) connectable to at least one of the plurality of data lines through one end of the at least one of the data lines (fig. 1 (12)); the first data line driving circuit being a line sequential driver (see, fig.3, col.5, lines 9-36); the second data line driving circuit (fig.1 (4)) connectable to the at least one of the plurality of data lines through the other end of the at least one of the plurality of the data lines (fig.1 (12)) ; at least one of the plurality of data lines (fig.1 (12)) connectable to both of the first data line driving circuit (fig.1(3)) and the second data line driving circuit (fig.1 (4)). **Kanatani et al** further teaches the second data line-driving circuit having a shift register (fig.1 (41)). **Kanatani et al** has

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failed to teach a plurality of switches, each switch connected to the other end of one of the plurality of the data lines, the shift register generating a plurality of single pluses sequentially, each of the plurality of switches being turned on in response to a single pulse. However, the patent **Maekawa et al** clearly teaches the second data line driving circuit (fig.1 (4)) having a shift register (col.4, lines 39-41) and a plurality of switches (fig.1 (PSW1...PSWN)), each switch connected to the other end of one of the plurality of the data lines, the shift register generating a plurality of single pluses sequentially, each of the plurality of switches being turned on in response to a single pulse (fig.4. col.4, lines 13-50).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have incorporated the switch system of **Maekawa et al** into the display device of **Kanatani et al** because this will provide effective attenuation of a potential oscillation in the video line generated as the sampling rate is increased.

Kanatani et al as modified by **Maekawa et al** teaches a first and a second data drivers, but has failed to teach the sequential driver outputting a plurality of simultaneous pulses to connected data lines. **Nakamura** is cited to teach that it is well known in a display system to have a sequential driver outputting a plurality of simultaneous pulses to connected data lines (see, Abstract; col.2, lines 1-9; 30-34; col.3, lines 42-68).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to combine the sequential driver outputting a plurality of simultaneous pulses to connected data lines system of **Nakamura** into the

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driving method of Kanatani **et al**, because this will provide a data drive circuit for use in a dynamic drive type display apparatus, which has a large display capacity but can use a shift register having a low operating frequency (see, col.1, lines 55-59).

3. Claim 25, 26, 30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanatani** in view of **Maekawa et al**; **Nakamura** and **Usui** (4,816,816).

As to 25, 26, 30, 33, **Kanatani** as modified by **Maekawa et al** and **Nakamura** clearly teaches a plurality of scan lines (fig.1 (11)); a plurality of data lines (fig.1 (12)); a first data line driver (fig.1 (3)); a second data line driver (fig.1 (4)). A first scan line driver (fig.1 (2)). **Kanatani** has failed to teach at least one of the pluralities of scan lines connectable to a first and second scan line-driving circuit. However, the patent of **Usui** clearly discloses at least one of the plurality of scan lines connectable to a first and second scan line driving circuit (4 (33,35)); a plurality of scan line disposed between the first and the second scan line drivers (see, figs.1 and 2); the first and second data line drivers having a function of outputting a digital data signals (fig.2 (31 and 29 outputting a digital data DB, and DA), the first data line driving circuit being a line sequential driver (see, figs.5 and 7). It is inherent for **Usui's** display matrix to have a plurality of pixels at the intersection of scan lines and data lines.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to combine the teachings of **Usui's** having two scan line driving circuits in to the system of **Kanatani**, because this will allow the

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display system of **Kanatani** to scan the data using two scanning drivers so that the data can be scanned and displayed faster.

4. Claims 31,32,34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kanatani** in view of **Maekawa et al** and **Usui** (4,816,816) further in view of **Youn** (5,856,816) and **Maekawa Toshiazu** (EP 0 678,848).

In regard to claims 31,32,34 and 35; **Kanatani** as modified by **Maekawa et al** and **Usui** discloses a first data line and a second data line driving circuit's drivers to output an analog data signals (fig.4 (24)), but has failed to teach (a) a first latch, a second latch and D/A. (b) first data lines and second data lines outputting a digital signals.

Youn is cited to teach (a) a first and a second latches (fig.5 (25a, 25b)) and D/A converter (fig.5 (27)).

Therefore it would have been obvious to one skill in the art at the time of the invention was made to have used the two latches of **Youn** into the device of **Kanatani** because this will allow **Kanatani's** device to store the information date temporarily and outputting when the information is needed.

The patent of **Toshiazu** teaches that it is outputting a digital data signals, (see, col.1, lines 54- col.2, lines 6).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to use the driving an analog data signals of

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Toshiazu with the digital data driving system of **Kanatani** since this is an advantage to **Usui's** device to provide the ability of displaying both digital and analog data signals.

Response to Arguments

5. Applicant's arguments with respect to claims 22-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (703) 305-4880. The examiner can normally be reached on M-F, T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.


Amare Mengistu
Primary Examiner
Art Unit 2673

A.M
February 5, 2004